

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-31. (Cancelled)

32. (Currently amended) A method for multiplexing digital data including a packet of digital data elements arranged 1..n, the method comprising:

sending a first stream of data elements stored in memory, starting with data element 1 of the packet and proceeding upward in sequential order;

sending a second stream of data elements stored in the memory, starting with data element n of the packet and proceeding downward in sequential order; and

terminating the sending of the first and second streams of data elements when the entire packet has been sent;

wherein sending of the first stream and second stream is at least started approximately simultaneously.

33. (Cancelled)

34. (Previously presented) The method according to claim 32, wherein a first device sends the first stream of data elements to a third device, and a second device sends the second stream of data elements to the third device.

35. (Currently amended) The method according to claim 34, wherein the third device places the data elements in a data buffer ~~[[the]]~~ having a size of the packet, and sends a signal to the first and second devices when the buffer is full.

36. (Previously presented) The method according to claim 32, wherein a first device sends the first stream to a second device, and the second stream to a third device.

37. (Previously presented) The method according to claim 36, wherein the second device and third device immediately at receipt forward the data they received from the first device to each other.

38. (Previously amended) The method according to claim 37, wherein the second and third device have been provided with a data buffer the size of the packet, wherein the received data are placed in the data buffer and the second and third devices send a signal to the first device when the respective data buffer is full.

39. (Currently Amended) A method for sending a data packet of digital data elements arranged 1..n to a first device in an ad-hoc data network of devices provided with a data processing unit, a data buffer and receiving routines for receiving data elements from at least two transmitting devices in the data network, the method comprising:

~~simultaneously~~ sending data elements of the data packet from at least a second device and a third device in the network to the first device, including:

sending data elements from the second device starting from data element 1 of the data packet and proceeding upward in sequential order;

sending data elements from the third device starting from data element n of the data packet and proceeding downward in sequential order; and

adding together the data elements sent by the second device and the data elements sent by the third device to form said data packet at the first device,

wherein data element 1 and data element n are sent approximately simultaneously.

40. (Previously Amended) The method according to claim 39, wherein the devices are further provided with transmission routines for transmitting data packets, received from one or more transmitting devices in the data network to at least one receiving device that is connected to the data network, independent of the one or more transmitting devices.

41. (Currently amended) A method for receiving a packet of data elements 1..n which are sent in at least a first stream of data elements sent starting with data element 1 of the packet and proceeding upward in sequential order, and a second stream of data elements sent starting with data element n of the packet and proceeding downward in sequential order, the method comprising:

providing a device with a data storage that defines a data buffer in the data storage for n data elements;

receiving the first stream of data elements and the second stream of data elements in the data buffer of the data storage;

filling the data buffer starting at the front of the data buffer and proceeding sequentially upward with the first stream of data elements; and

filling the data buffer starting with rear of the data buffer and proceeding sequentially downward with the second stream of data elements,

wherein data element 1 and data element n are received in the data buffer approximately simultaneously.

42. (Previously amended) The method according to claim 41, wherein the device informs one or more sources of the streams of data elements when the data buffer is full.

43. (Currently amended) A method for sending a packet of digital data elements 1...n, the method comprising:

creating a data buffer in a data storage device for n digital data elements,
storing the digital data elements in sequential order in the data buffer;
sending the digital data elements in a first stream starting with data element 1 of the packet and proceeding upward in sequential order; and
sending a second stream starting with data element n of the packet and proceeding downward in sequential order;

wherein sending of the first stream and second stream is at least started approximately simultaneously.

44. (Previously amended) The method according to claim 43, further comprising:

terminating the sending of the first stream and the second stream upon receipt of a signal that a receiving buffer is full.

45. (Currently amended) A computer-readable storage medium storing a computer program which, when executed by a computer, causes the computer to perform a method of sending a packet of digital data elements arranged 1,...,n, the method comprising: ~~a first transmission routine for~~

sending a first stream of digital data elements starting with data element 1 of the packet and proceeding upward in sequential order₁[[,]] and

sending a second stream of digital data elements starting with data element n of the packet and proceeding downward in sequential order₁

wherein sending of the first stream and second stream is at least started approximately simultaneously.

46. (Currently amended) A computer-readable storage medium storing a computer program which, when executed by a computer, causes the computer to perform a method of receiving a packet of digital data elements arranged 1,...,n, the method comprising:

executing a first receiving routine for receiving a first stream of digital data and a second receiving routine for approximately simultaneously receiving a second stream of digital data; ~~and~~

executing a first storing routine for storing the first stream of digital data in a memory starting at the front of the memory and sequentially filling the memory towards the ~~[[end]]~~ back, and a second storing routine for storing the second stream of digital data starting at the ~~[[end]]~~ back of the memory and filling the memory sequentially towards the front, and ~~further~~

executing a stop routine for ending the receiving of digital data when the memory is full or the n digital data elements have been received,

wherein the digital data from the front of the memory and the digital data from the back of the memory are stored approximately simultaneously.

47. (Currently amended) An apparatus for sending a packet of digital data elements 1..n, comprising:

a memory for storing the packet of digital data,

a first transmitter for sending a first stream of digital data elements, starting with data element 1 of the packet and proceeding upward in sequential order, and

a second transmitter for sending a second stream of digital data elements, starting with data element n of the packet and proceeding downward in sequential order;

wherein the first transmitter and second transmitter are configured to at least start sending the first stream and second stream approximately simultaneously.

48. (Currently amended) An apparatus for receiving a packet of digital data elements, comprising:

a memory for storing the packet of digital data elements,

a first receiver for receiving a first stream of digital data elements of the packet, and storing the first stream of digital data elements in said memory, starting from the front of the memory and proceeding toward the back of the memory, and

a second receiver for receiving a second stream of digital data elements of the packet, and storing the second stream of digital data elements in said memory, starting from the back of the memory and proceeding toward the front of the memory;

wherein the digital data from the front of the memory and the digital data from the back of the memory are received approximately simultaneously.

49. (Previously amended) The apparatus of claim 47, wherein the first transmitter and the second transmitter are configured to terminate sending when a signal is received from a receiver.

50. (Currently amended) The apparatus of claim 48, wherein the first receiver, [[and]] the second receiver, or both the first and second receivers are configured to send a signal to a transmitter when the memory is full.